

Recovery Plan Action Status

Plan Name: Final Recovery Plan for the Endangered Western Lily (*Lilium occidentale*)

Plan Status: Final

Plan Date: 31-Mar-98

Lead Agency: USFWS

Lead Office: Arcata Fish And Wildlife Office

(507)

822-7201)

| Species | Action Priority # | Action # | Action Description | Action Status | Est. Initiation Date | Est. Completion Date | Responsible Parties | Work Type | Labor Type | Action Comments |
|--|-------------------|----------|---|-----------------|----------------------|----------------------|--|------------------------------|-------------------------------|--|
| Western lily (<i>Lilium occidentale</i>) | 1 | 11 | Locate all known sites | Ongoing Current | FY 1995 - FY 1999 | | Oregon Department of Agriculture, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Population Surveys | Internal Technical Assistance | Routine investigation of potential habitat conducted in Oregon and California by FWS staff, as opportunities arise, and as part of routine project planning at federal, state and local level. |
| Western lily (<i>Lilium occidentale</i>) | 1 | 121 | Characterize habitat of existing sites | Ongoing Current | Prior to FY 1995 | | Oregon Department of Agriculture, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Habitat Status | Internal Field Assistance | Ongoing research on soil temperature/moisture relations and influence of water table on western lily at multiple sites across the range. |
| Western lily (<i>Lilium occidentale</i>) | 1 | 122 | Identify potential habitat | Ongoing Current | FY 2000 - FY 2004 | | Oregon Department of Agriculture, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Habitat Status | Internal Field Assistance | Habitat monitoring has been conducted for the past 7 years with the objective of identifying key characteristics that make habitat suitable. |
| Western lily (<i>Lilium occidentale</i>) | 1 | 123 | Search for additional sites and potential habitat | Ongoing Current | FY 2000 - FY 2004 | | Oregon Department of Agriculture, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Population Surveys | Internal Field Assistance | Oregon Office evaluated 4 private properties 2010 |
| Western lily (<i>Lilium occidentale</i>) | 1 | 13 | Determine patterns of genetic diversity | Complete | FY 2005 | FY 2008 | Berry Botanic Garden | Research: General | Contract | Allozyme study and genetics management plan completed 2008. |

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| Western lily (Lilium occidentale) | 1 | 14 | Prioritize recovery populations | Ongoing Current | FY 2000 - FY 2004 | | Oregon Department of Agriculture, Oregon Department of Transportation, Oregon Department of Parks and Recreation, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game | Management: Planning | Species Expert | Existing populations prioritized in conjunction with 5 year status review completed 2008, available on USFWS website. |
| Western lily (Lilium occidentale) | 1 | 15 | Delineate boundaries of Management Areas | Ongoing Current | FY 2000 - FY 2004 | | Oregon Department of Agriculture, U.S. Fish and Wildlife Service, California Department of Fish and Game | Management: Planning | Internal Administrative | hauser site fence completed; habitat boundary delineated on private property side. |
| Western lily (Lilium occidentale) | 1 | 16 | Secure the delineated management areas | Partially Complete | FY 1995 - FY 1999 | | The Nature Conservancy, Oregon Chapter, U.S. Fish and Wildlife Service, California Department of Fish and Game | Acquisition: Management Agreement | Internal Technical Assistance, Species Expert | 1 of 2 populations fenced at Harris SP 2008; addtl site there proposed for fencing; hauser site fenced; informal agreements with multiple private owners California; general monitoring and research maintains visibility for affected landowners/agencies |

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| Western lily (<i>Lilium occidentale</i>) | 2 | 171 | Conduct research on vegetation control methods | Ongoing Current | Prior to FY 1995 | | Oregon Department of Agriculture, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: General | Species Expert | Section 6 funded project begun in 1997 at Humboldt and Del Norte Co; completed 2006. Coastal grant funded project begun 2005 along Oregon Coast; completed 2009; research on hydrological impacts of spruce aging and need for stand removal implemented 2008 Humboldt Co - ongoing; research on fire management planned for Point St George, Del Norte Co 2010-11. |
| Western lily (<i>Lilium occidentale</i>) | 2 | 172 | Conduct genetic studies | Complete | FY 2005 | FY 2007 | Oregon Department of Agriculture, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Genetics | Contract | |
| Western lily (<i>Lilium occidentale</i>) | 2 | 173 | Conduct research on effects of small and large mammal herbivory | Ongoing Not Current | Prior to FY 1995 | | U.S. Fish and Wildlife Service | Research | Internal Technical Assistance | Section 6 funded project begun in 1997 completed 2006. |
| Western lily (<i>Lilium occidentale</i>) | 2 | 174 | Conduct research on Insect herbivory & microbial rot control measures | Not Started | | | Oregon Department of Agriculture, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Disease, Research: Predation | Internal Field Assistance | |
| Western lily (<i>Lilium occidentale</i>) | 2 | 181 | Characterize existing conditions | Ongoing Current | Prior to FY 1995 | | Oregon Department of Agriculture, Oregon Natural Heritage Program, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Habitat Status | Internal Field Assistance | |

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| Western lily (<i>Lilium occidentale</i>) | 2 | 182 | Develop site history | Ongoing Current | Prior to FY 1995 | | Oregon Department of Agriculture, Oregon Department of Transportation, Oregon Department of Parks and Recreation, Oregon Natural Heritage Program, The Nature Conservancy, California Chapter, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: General | Species Expert | Various comprehensive reports completed since 1987 describing history of the majority of significant sites throughout the range; current effort to update the monitoring and management record for many sites by 2012. |
| Western lily (<i>Lilium occidentale</i>) | 2 | 183 | Control woody vegetation | Ongoing Current | Prior to FY 1995 | | Oregon Department of Agriculture, Oregon Department of Transportation, Oregon Department of Parks and Recreation, The Nature Conservancy, Oregon Chapter, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game | Management: Habitat Maintenance and Manipulation | Contract, Internal Field Assistance, Species Expert | Extensive habitat manual treatment conducted at Bastendorf Bog and Hauser Bog in Oregon in 2009-10; also Christensen site and Table Bluff EcoReserve, California; Oregon Coastal prgm funded state parks for multi-park habitat restoration project 2009-10; burn plan recently completed for Pt St George in California-plans under way for experimental burn there; Section 6 funding obtained 2011 for preparations to reintroduce cattle to Crescent City Marsh Wildlife Area, California. Bonneville Power funding conifer removal on Cape Blanco State Park 2011, in addition to plans for reintroduction of livestock grazing there. |

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| Western lily (<i>Lilium occidentale</i>) | 2 | 184 | Develop augmentation plan | Ongoing Current | FY 2005 | | Oregon Department of Agriculture, Oregon Department of Transportation, Oregon Department of Parks and Recreation, Oregon Natural Heritage Program, The Nature Conservancy, California Chapter, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game | Management: Planning | Species Expert | Genetics management plan completed in 2008, outlining future augmentation guidelines. ODA currently conducting propagation in preparation for augmentation of OR State Park sites and one site owned by OR Department of Transportation. |
| Western lily (<i>Lilium occidentale</i>) | 2 | 185 | Develop grazing plans for sites used by livestock | Ongoing Current | Prior to FY 1995 | | Oregon Department of Agriculture, Oregon Natural Heritage Program, The Nature Conservancy, California Chapter, U.S. Fish and Wildlife Service | Management: Planning | Species Expert | Annual grazing implemented at Table Bluff Eco Reserve and inconsistently at one other site on Table Bluff; plans under way for reintroduction of grazing to Crescent City Marsh. No other sites currently grazed, or planned for grazing. |
| Western lily (<i>Lilium occidentale</i>) | 2 | 186 | Develop plans to reduce threats from deer, insects, and disease | Ongoing Current | FY 2000 - FY 2004 | | Oregon Department of Agriculture, Oregon Department of Transportation, Oregon Department of Parks and Recreation, Oregon Natural Heritage Program, The Nature Conservancy, Oregon Chapter, The Nature Conservancy, California Chapter, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game | Management: Planning | Species Expert | Research on deer impacts conducted periodically since 1987. Deer enclosure constructed at Table Bluff Eco Reserve in California. Ongoing discussion on the degree of threat, and how to minimize impacts. Population monitoring has not indicated disease and insects as an ongoing significant threat, altho impacts have approached significance during some years at some sites. |

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| Western lily (<i>Lilium occidentale</i>) | 2 | 191 | Conduct demography studies | Ongoing Current | Prior to FY 1995 | | Oregon Department of Agriculture, Oregon Natural Heritage Program, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Demographic Studies | Contract | Long-term demographic monitoring begun at Bastendorf Bog in the 1980's, continuing. Intensive multi-year demographic studies implemented at Crescent City marsh and Table Bluff Ecological Reserve in California in the late 1990's. Other demographic monitoring conducted periodically at various sites as necessary to monitor health of populations. |
| Western lily (<i>Lilium occidentale</i>) | 2 | 192 | Develop & implement monitoring protocols | Ongoing Current | Prior to FY 1995 | | Oregon Department of Agriculture, Oregon Natural Heritage Program, U.S. Fish and Wildlife Service, California Department of Fish and Game | Management: General | Species Expert | Initial monitoring protocol for California sites developed in 1987; Draft Service population monitoring protocol 1998; draft Service western lily survey protocol 2005. Population monitoring implemented at most sites generally on 2-3 year rotation. |
| Western lily (<i>Lilium occidentale</i>) | 2 | 21 | Bank seeds | Not Started | | | Berry Botanic Garden, U.S. Fish and Wildlife Service | Management: Planning | Internal Field Assistance | Berry Botanic Garden maintains a seedbank, begun in the late 1990's. |

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| Western lily (<i>Lilium occidentale</i>) | 3 | 22 | Conduct reintroduction & augmentation studies | Ongoing Current | Prior to FY 1995 | | Oregon Department of Agriculture, Oregon Department of Parks and Recreation, Oregon Natural Heritage Program, U.S. Fish and Wildlife Service, California Department of Fish and Game | Management: Reintroduction, Research: Propagation | Contract, Species Expert | Initial offsite propagation and augmentation of some populations in California started in 1992; offsite propagation in Oregon begun 2005; OR heritage pgm funded 2009 and seed collection conducted to propagate stock for augmentation at multiple OR sites. Ongoing. |
| Western lily (<i>Lilium occidentale</i>) | 3 | 3 | Public outreach | Ongoing Current | Prior to FY 1995 | | U.S. Fish and Wildlife Service | Other: Information and Education | Internal Administrative, Species Expert | Landowner contacts begun in California in 1980's; ongoing throughout range. Periodic informal meetings held with agencies and interested publics to report on recovery progress and needs. Newport Office presentation at Brookings & Bandon 2010 to facilitate permitting and encourage adoption of species by City, respectively. Arcata Office presentation on hydrological issues at Crescent City Marsh 2010. Periodic presentations to public, and fieldtrips highlighting threats to the lily. |